REMARKS

Claims 1 and 11 are amended. Claims 1-15, as amended, remain in the application. Applicant amended the specification on Page 6 to correct a typographical error. No new matter is added by the amendments to the specification and to the claims.

The Rejections:

In the Office Action dated November 8, 2005, the Examiner rejected Claims 11-15 under 35 U.S.C. 112, second paragraph, as being indefinite for falling to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated that Claim 11 recites the limitation "said plurality of fibers" in step "b", whereas under step "a" the limitation "a plurality of load-bearing strands" is recited such that there is insufficient antecedent basis for this limitation in the claim. The Examiner also stated that Claim 14 further recites the limitation "the fibers" in line 2.

The Examiner rejected Claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over De Angelis (5,566,786) in view of Oleson, et al. (4,956,039).

Regarding Claims 1 and 7, the Examiner stated that De Angelis discloses an elongated load-bearing support device (1) with load bearing strands (4), each having a plurality of fibers (5) of a base material in a first phase (aramid fibers (Col. 2, Line 38)) and the strands being surrounded by a sheath (7). According to the Examiner, the reinforcing material of De Angelis is of a second phase, yet it is externally applied to the base material as "... an impregnating medium, for example polyurethane solution, for the protection of the fibers 5" (Col.3, Line 57) whereby the bending fatigue strength of the strands is increased, though at the expense of "... carrying capability and the modulus of elasticity..." of the fiber (Col. 3, Line 61). The Examiner stated that De Angelis adds, "Expediently, the individual strands can also be protected by a braided sleeve of polyester fibers" (Col. 3, Line 67).

The Examiner noted that Oleson, however, discloses the application of a thermoplastic sleeve that "... is preferably filled with reinforcement elements having a high modulus of elasticity (Col. 2, Line 60), thereby teaching the distribution of reinforcing material of one phase within a base material of another (second) phase. Furthermore, according to the Examiner, since the objective of the Oleson reference was "... to provide a method or an apparatus for the

economical manufacture of a cable-like synthetic composite body which satisfies the requirements of being able to bear relatively high tensile and compressive forces in every respect..." and that De Angelis discloses further an "expedient" means of protecting the strands through a polyester sleeve, in lieu of impregnating the strands with a polyurethane solution, it would have been obvious to one of ordinary skill in the art to modify the base material of De Angelis with the teaching of Oleson, in order to gain the commercial and structural (performance) features of Oleson.

Regarding Claim 2, the Examiner stated that De Angelis discloses a plurality of fibers (5) formed into a cable (4 and, in total, 1).

With respect to Claims 3 and 8, the Examiner stated that though De Angelis discloses a base material (5) of aramid fiber and a reinforcing material comprising a polyurethane solution with which "each individual strand 4 is treated..." (Col. 3, Line 56), thereby increasing the bending fatigue strength and, therefore, the (bending) modulus of elasticity of each strand in a radial direction (whereby each strand comprises fibers) he is silent regarding the treatment of the individual fibers. According to the Examiner, Olesen, however, discloses a thermoplastic material that can be "... polypropylene filled with 20% E-glass staple fibers... (Col. 7, Line 7) whereby the glass fibers significantly increase the modulus of elasticity of each of the fibers in the longitudinal direction. Therefore, the Examiner believes that it would have been obvious to one of ordinary skill in the art to modify the invention of De Angelis with the teaching of Olesen, in order to provide a base material of superior tensile strength.

Regarding Claims 4 and 9, the Examiner stated that Olesen discloses a reinforcing material as "... staple fibers (23) of a high modulus of elasticity..." which is used to fill the base material (13) of thermoplastic material.

The Examiner stated that in Claims 5 and 10, as noted above, Olesen discloses a reinforcing material as staple fibers... ", wherein staple fibers are understood to be short fibers.

Regarding Claim 6, the Examiner stated that De Angelis discloses that in ". . . another form or embodiment each individual strand 4 is provided with a separate, annular closed casing..." (Col. 4, Line 63).

Regarding Claims 11-15, the Examiner stated that the devices of Claims 1-10 would necessarily have to be formed in order to function and it would have been obvious to perform all

the method steps of Claims 11-15 when producing the device of De Angelis as modified by Olesen above, in a usual and expected fashion, in as much as the method claims recite no limiting steps beyond forming each of the components.

In regard to Claim 11, the Examiner stated that De Angelis, again, discloses an elongated load-bearing support device (1) with load bearing strands (4) from a base material in a first phase (aramid fibers) and a reinforcing material in a second phase ("... an impregnating medium, polyurethane solution), with the strands being surrounded by a sheath (7).

In regard to Claim 12, the Examiner stated that De Angelis discloses a base material selected from aramid (5) and Oleson discloses a base material selected from a thermoplastic.

In regard to Claim 13, the Examiner stated that De Angelis discloses a reinforcing material (polyurethane solution) that provides an increased bending fatigue strength (bending modulus of elasticity) in comparison to that of the base material (aramid fiber) and Oleson teaches a reinforcing material as "... staple fibers (23) of a high modulus of elasticity..." which is used to fill the base material (13) of thermoplastic material (i.e., polypropylene).

In regard to Claim 14, the Examiner stated that De Angelis discloses the treatment of the individual strands (4) with a reinforcing material (preferably polyurethane solution) for purpose of protection and increasing the bending fatigue strength (bending modulus of elasticity) of each strand in a radial direction.

In regard to Claim 15, the Examiner stated that whereas De Angelis discloses an impregnation solution of polyurethane, Olesen teaches the incorporation of "reinforcement elements, ... in particular staple fibers..." (001. 2, Line 61) and that the staple fibers be of "... glass, aramid or carbon..." (Cot. 4, Line 5), and where staple fibers are understood to be short fibers.

The Response:

Applicant amended Claims 1 and 11 to overcome the rejection under 35 U.S.C. 112, second paragraph. Amended Claim 1 recites that the strands are formed of load-bearing fibers of a base material being in a first phase and a reinforcing material being in a second phase. Claim 1 defines a load-bearing support formed with the load-bearing strands surrounded by a sheath. The strands are made from a plurality of the load-bearing fibers formed of the base material being in

the first phase and the reinforcing material being in the second phase and being distributed in the base material. Amended Claim 11 recites the production of the two-phase fibers.

The introduction of two phases in the fibers of the elevator cable increases the travel comfort and safety. In particular, the following disadvantages are eliminated: the short service life of the cable, the low modulus of elasticity of the cable, the undesired elongation of the cable and the troublesome oscillations of the lift set in motion (see Page 3, Lines 5-8). The improvement of the mechanical properties is caused by the new phase introduced in the bulk of the load-bearing fiber.

De Angelis and Oleson do not show or suggest any new phase introduced in the bulk of the fibers. The fibers disclosed in both documents consist of only one phase.

De Angelis discusses the synthetic fiber cable 1 shown as prior art in Applicant's Fig. 1. De Angelis uses a polyurethane solution to impregnate the strands 4 and protect the fibers 5. While the bending fatigue strength of the cable 1 depends upon the portion of polyurethane at each strand 4, the carrying capacity and the modulus of elasticity of the cable 1 fall with increasing portions of polyurethane. There is no suggestion that the polyurethane is a reinforcing material for the fibers 5.

Oleson discusses the introduction of short reinforcement elements 23 in the second thermoplastic sleeve 13 of the cable, which sleeve does not comprise the load-bearing fibers 11, but is merely a sheath of the cable. The reinforcements 23 do not modify the mechanical properties of the load-bearing fibers 11 or even of the second thermoplastic sleeve 13. They simply help to achieve a more intimate contact between the first and the second thermoplastic material during the extrusion process (see Column 3, Lines 7-16; Column 7, Lines 16-22), since these reinforcements partially penetrate from the second into the first thermoplastic material.

Thus, the materials identified by the Examiner in De Angelis and Oleson as "reinforcing material" are applied exteriorly to the strands and are not distributed in the base material of the individual fibers as defined by Applicant's claims. Accordingly, Claims 1-15 are not obvious with respect to any combination of De Angelis and Oleson.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited Loos (4,034,547), Damien (5,651 ,245), Simpson (4,202,164), Priesnitz, et al (5,830,304) and Klees (4,887,422) for a cable having a wire

rope jacket with core of year filaments with a specific tensile strength greater than that of the members of the jacket, a cable having a core of synthetic material bounded by outer strands of metallic fibers, an aramid fiber rope impregnated and surrounded by a plastic material, an apparatus and process for a tension-resistant (cable) core element containing glass and thermoplastic fibers, and a rope consisting of helically laid outer strands around a high strength synthetic fiber core, respectively. Applicant reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in the rejections.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.